XII.—*Description of a new Species of* Nucleolites, *with Remarks on the Subdivisions of the Genus.* By Prof. F. Jeffrey Bell, M.A., Sec. R.M.S.

The Trustees of the British Museum have lately acquired by purchase a small specimen of a species clearly allied to the form which those who use Mr. Alex. Agassiz's 'Revision of the Echini' would call *Nucleolites epigonus*, Mart.; the first point of interest in this acquisition was the locality from which it was derived, for it came, not, like *N. epigonus*, from the eastern seas, but from Nassau in the Bahamas.

But this chorological interest soon paled before the morphological; in *N. epigonus*, it will be remembered, the anal region looks backwards, is elliptical in form, with the long axis vertical, and the periproctal groove is continued to the ventral surface; an essentially similar disposition of the anal region is found in *Echinobrissus recens*. But in the new species we have quite a different arrangement; though the anal region is elliptical in form, the long axis lies transversely, and there is no groove reaching to the ventral surface; in these two particulars it resembles *Rhynchopygus*. *Echinobrissus*, on the other hand, resembles the new form in having the actinostome wider than long, whereas in *N. epigonus* that orifice is longer than wide.

In other characters—the arrangement of the ambulacra and ambulacral pores, the general ornamentation of the test, the delicacy and whiteness of the whole test—*N. occidentalis*, as the new species may be called, and *N. epigonus* agree exactly.

The question first raised by an annectent form such as this may nearly always be stated in the following terms:—Have the generic divisions which have been made been natural? In other words, Have the characters on which genera are based the constancy which makes them of value? That systematists have attached importance to the form and relations of the oral and anal areas is indisputable.

In the latest authoritative work on Echinoids generally—I mean, of course, the chapters on Echinoderms in Zittel's 'Palæontologie'—*Nucleolites* is kept separate from *Echinobrissus*, and is thus defined:—"Wie vorige [*Echinobrissus*], aber Poren nicht gejocht;" but if Prof. Zittel was unable to examine an example of *E. recens*, he should have made use

of the experience of Mr. Alex. Agassiz, who remarks * :— "The mere conjugation of the pores is an insufficient character, as in specimens of *N. epigonus* and of *E. recens* we find in the same individual a petal in which the conjugation is marked, another where it is indistinct, and frequently the corresponding one in which the conjugation cannot be traced;" or of the judgment of Prof. E. von Martens †, "Die seichten, schwer erkennbaren Furchen der vorliegenden Art rechtfertigen eine solche Trennung nicht." Prof. Zittel is not to be congratulated on a step backward from the position taken up by D'Orbigny (Pal. Franç., Crétac. vi. p. 388), Wright, and others as to the synonymy of *Echinobrissus* with *Nucleolites*.

If, however, we are content to accept the rules of nomenclature suggested by the British Association we must use Lamarck's name *Nucleolites* rather than the pre-Linnean (1732) name of *Echinobrissus*, which was suggested by Breynius in his remarkable 'Schediasma.'

But if Zittel's separation of *Echinobrissus* from *Nucleolites* be so little justifiable, does not the transverse long axis of our new species lead us so near to *Rhynchopygus* as to suggest the merging of these forms under one genus? It is difficult to answer this question with certainty; the form of the periproct is, it is clear, not of generic importance; but the much better development of the oral floscelle and the inequality of the constituent rows of pores in the paired ambulacra show that *Rhynchopygus* has gone further in the way of differentiation than has *Nucleolites*; and just as Wright ('Oolitic Echinodermata,' p. 360) keeps, notwithstanding the opinion of E. Forbes, *Clypeus* distinct from *Nucleolites*, on account of the "magnitude and development of the long, wide, petaloidal, poriferous zones," so the greater tendency to a petaloid form and that sure sign of differentiation, inequality in length of the zones, would, even without the characters of the mouth, outweigh the value of the form of the periproct.

It is to be hoped that the structural characters of this new species will be sufficient to attract the notice of the palæontologist, who will, I trust, agree that

(1) *Nucleolites* and *Echinobrissus* are synonymous.
(2) There is nothing to justify even their subgeneric division after the discovery of *N. occidentalis*.
(3) The form of the periproct and of the actinostome are less important, as signs of differentiation, than the

* Rev. Ech. p. 557.
† Archiv für Naturg. xxxii. (1866), p. 180.

characters of the ambulacra and the development of floscelles.

The new species may be defined in the following terms:—

Nucleolites occidentalis.

General form and habit very similar to that of *N. epigonus*, but the long axis of the elliptical anus is transverse, and there is no periproctal groove; the actinostome tends to be pentagonal, but is wider than long; the test is not quite so wide or so swollen posteriorly as in *N. epigonus*.

The length of the single specimen is 17, and its greatest breadth 13·5 millim.

Curiously enough the single test is spineless and bleached, and this (artificially, of course) heightens its resemblance to *N. epigonus*, all known specimens of which are in the same condition.

Hab. Bahamas.

In Coll. B. M.

XIII.—*Description of two new Squirrels from North Borneo.*

By Oldfield Thomas.

Among a collection of small Mammalia made by Mr. John Whitehead during his recent successful expedition to Mount Kina-Balu, and kindly submitted to me for examination, there occur representatives of the two following new squirrels.

Sciurus Whiteheadi, sp. n.

Allied and very similar to *S. exilis*, Müll., but slightly larger, and with the ears, instead of being rounded and short-haired, narrow, pointed, and with beautiful long black-and-white pencils of hair, nearly as long as the head, and standing out conspicuously from the general grey of the body. A white spot also present on the neck just behind the ear. Colour elsewhere precisely as in *S. exilis*. Face without any trace of the black-and-white markings characteristic of *S. melanotis*, Müll. & Schl.

Skull very peculiarly shaped, with a short broad cranial and a disproportionally long and powerful facial portion, the distance from the tip of the nasals to a point between the anterior edges of the orbits 12·8 millim., as compared to about 10 millim. in *S. exilis*, and 11 millim. in *S. melanotis*, the latter an animal with the cranial part of the skull as large as, if not larger than, that of *S. Whiteheadi*.